

If there is no display command or the presser levers are not actuated—(E):

The flow (E) of FIG. 7 shows an operation in which there is no display command from the IC card reader 20 or the presser levers 39, 40 are not actuated. In this operation, the IC card reader 20 does not effect the control for the display of newer data (C), the display of older data (D), the actuation of the presser lever 40 (B), and the actuation of the presser lever 39 (A). When the IC card 1 receives transaction data from the IC card reader 20, the received data is written into the memory 10 and displayed under the control of the IC card 1 itself. Therefore, any older data is not displayed, but N transaction data items are written into the memory 10 and displayed on the display 3. As a consequence, the customer can know the latest transaction data by pulling the IC card 1 out of the card insertion slot 29 (FIG. 4).

The operation will be described with reference to the flow (E) of FIG. 7.

When transaction data is received through signal receiving means in a step 241, the transaction data is transferred by the transmitter/receiver 12 to the processor 9 in a step 242. The processor 9 then edits the transaction data for each transaction in a step 243. The N transaction data are then written from the processor 9 into the memory 10 in a step 244, the data including  $AO \sim An$  = writing data, and an N data writing signal WRITE. The processor 9 then processes the display address  $Ax \sim Ny$  for the latest transaction data among display the N transaction data. The processor 9 delivers the display address  $= AO \sim An (Ax + Ny)$  and a read-out signal READ to the memory 10 in the step 206. The memory 10 then delivers the transaction data in the indicated display address  $Ax + Ny$  as display data  $D0 \sim D7$  to the processor 9 in the step 207. The processor 9 then displays "N newer transaction data" in the steps 208 through 210 in the same manner as described above. The customer can now know the newest transaction data by pulling the IC card 1 out of the card insertion slot 29.

With the arrangement of the present invention, the IC card having the control switches, the display controller, the display, the transmitter/receiver, the processor, and the memory is controlled by the control switches and the external device or IC card reader for automatically recording data in, reading data from, and displaying data on the IC card. Therefore, the IC card can double as a business transaction card and a personal identification card, and the customer is not required to carry and store a passbook and slips of transaction details.

Since the automatic cash dispensing and depositing machine incorporating the IC card reader is not required to be equipped with a device for recording data on passbooks and a device for issuing slips of transaction details, the automatic cash dispensing and depositing machine can be smaller in size and less costly to manufacture.

The IC card reader of the present invention has a memory for storing data on effectiveness such as personal identification or various data dependent on different application, so that the data can be retrieved for the IC card only. The IC card reader can therefore be widely utilized for reading data from admission checking cards, credit cards, and validation cards.

Although certain preferred embodiments have been shown and described, it should be understood that many changes and modifications may be made therein

without departing from the scope of the appended claims.

What is claimed is:

1. An IC card with a display for storing transaction data from a card recording and reading device in combination with the card recording and reading device and for displaying it, comprising:

- (a) a transmitter means and a receiver means respectively connected electrically and optically with a receiver part and a transmitter part of the card recording and reading device;
- (b) a transmitter/receiver part for transmitting and receiving data to and from the card recording and reading device via said transmitter means and said receiver means;
- (c) a processing unit for processing said data;
- (d) a memory part for storing transaction data contained within said data processed in said processing unit in conformity with the development of an associated transaction;
- (e) a display part for displaying one of said transaction data stored in said memory part;
- (f) a first operating switch for sequentially switching the display of the transaction data presently displayed on said display part to that of new transaction data one at a time;
- (g) a second operating switch for sequentially switching the display of the transaction data presently displayed on said display part to the previously transaction data one at a time;
- (h) an operation and display control part for controlling said display part so as to display said transaction data stored in said memory part in conformity with operations of said first operating switch and said second operating switch;
- (i) wherein said data received from the card recording and reading device via said receiver means includes one of either a display instruction to instruct new transaction data to be displayed or a display instruction to instruct the previous transaction data to be displayed; and
- (j) wherein said operation and display control part, upon reception of said display instruction by said transmitter/receiver part, displays and controls said transaction data stored in said memory part, whereby desired data stored in said memory part is displayed on said display part based upon said instruction provided via said transmitter/receiver part or based upon operations of said first and second operating switches.

2. A card recording and reading device for an IC card with a display, said display displaying on the display part one transaction data from among a plurality of transaction data stored in a memory part in conformity with the development of an associated transaction by operation of an operating switch for switching one at a time transaction data presently displayed or an instruction provided via a transmitter/receiver part, said card recording and reading device comprising:

- (a) a transmitter and receiver means for respectively transmitting and receiving data between said transmitter/receiver part of said IC card via a transmitter means and a receiver means provided in said IC card;
- (b) said data including associated transaction data, said transaction data being stored in said memory part of the IC card in conformity with the development of said associated transaction, one of the